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SUMMARY

Since 1996, U.S. Army soldiers returning from NATO operations in the Balkans have participated in a command-directed Psychological Screening Program to determine psychological readiness. This study summarizes psychological screening results from 1,043 soldiers after their return from a 1999 deployment to Albania in support of NATO's Operation Allied Force. Although the soldiers in this post-deployment study reported rates of psychological distress somewhat higher than rates reported by soldiers re-deploying from Bosnia, the overall results indicated a high level of mental health and psychological readiness. Furthermore, the findings indicated that soldiers with prior deployment to the Balkans reported lower rates of psychological distress, suggesting a "stress inoculation effect" associated with deployment experience. The Psychological Screening Program affords soldiers an opportunity to report their mental health concerns and to receive a referral for mental health services. The screening program also provides commanders an assessment of the psychological readiness of their units.

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Keywords: Psychological Screening, Post-deployment, Stress, Depression, Alcohol.

ASSESSING PSYCHOLOGICAL READINESS IN U.S. SOLDIERS FOLLOWING NATO OPERATIONS

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INTRODUCTION

From April-July 1999, U.S. soldiers from the 1st Armored Division in Baumholder, Germany deployed to Albania, as part of Operation Allied Force, NATO's operation to drive Serbian military units out of Kosovo. Within three months (August-October 1999) after returning from the deployment, soldiers completed a command-directed integrated health assessment⁽¹⁾. One component of the health assessment was the Psychological Screening Program. This paper reports the psychological screening results obtained from 1,043 soldiers during post-deployment from Albania, and compares these findings to psychological screening results obtained from two other samples of 1st Armored Division soldiers: those redeploying from Bosnia and those living in Garrison.

BACKGROUND

In February 1996, partly in response to the medical concerns following the Gulf War in 1991, the US military instituted a Joint Health Surveillance Program for soldiers redeploying from the NATO mission in the former Yugoslavia⁽²⁾. One

component of Health Surveillance was a psychological screen. The purpose of the screen was to assess the mental health and psychological readiness of soldiers during redeployment⁽³⁾.

There were three components to the psychological screening process. (1) Soldiers completed a **primary screen** consisting of demographic questions, and three psychological scales that measured symptoms of post-traumatic stress, depression, and alcohol abuse. (2) Soldiers who exceeded criteria on any of these scales completed **secondary screen interviews** conducted by trained mental health personnel. (3) Secondary interview results determined whether to **refer** soldiers for follow-up mental health services.⁽⁴⁾ Figure 1.

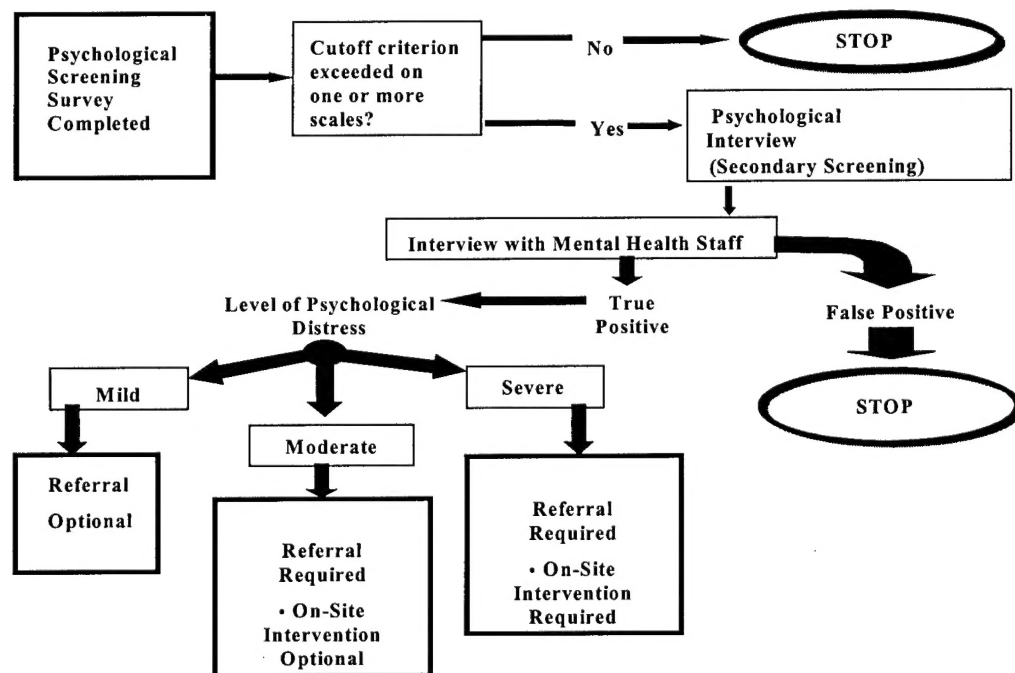


Figure 1: psychological screening flowchart.

Primary Screen Demographics

Participants were asked about their gender, race, educational history, marital status, military background, and deployment history in the Balkans.

Primary Screen Clinical Scales

The clinical scales included the Post-Traumatic Stress Disorder Checklist ⁽⁵⁾, the Self-rating Depression Scale ⁽⁶⁾, and the CAGE Questionnaire ⁽⁷⁾.

In 1998, the U.S. Army Medical Research Unit-Europe conducted the same psychological screening procedure with non-deployed soldiers living in a garrison environment at 10 U.S. Army posts in Germany. The Medical Research Unit established garrison mental health norms and compared them to mental health norms obtained from the Joint Medical Surveillance Program in Bosnia ⁽⁸⁾. In the 1999 post-deployment Albania study we again used the same psychological screening procedure. In addition, we also selected sub-samples of 1st Armored Division soldiers from the Garrison and Bosnia studies in order to compare findings across missions. Figure 2

Mission	Location	Data Collection	N Size
Operation Allied Force	Albania	AUG-OCT 99 post-deployment	1,043
Operation Joint Endeavor	Bosnia	FEB – DEC 96 Re-deployment	4,746
Garrison	Germany	APR – JUL 98	338

Figure 2: 1st Armored Division mission comparisons.

FINDINGS

Of the Operation Allied Force soldiers who completed the post-deployment primary screen, 235 (22.6 %) exceeded criteria on the post-traumatic stress, depression, or alcohol scale. After conducting secondary screening interviews, mental health personnel referred 62 (5.9% of the entire sample) soldiers for mental health follow-up. The majority of Soldiers from Operation Allied Force (94.1%) completed the screening process without a referral. Figure 3.

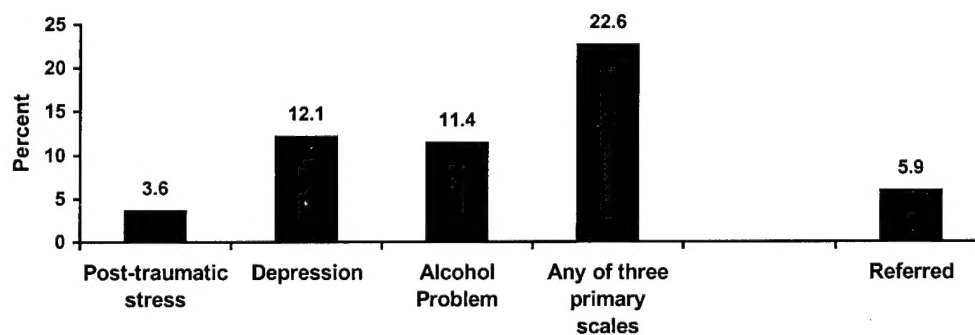


Figure 3: Operation Allied Force primary and secondary screening results.

Upon further analysis we found that commissioned and non-commissioned officers were less likely to exceed criteria on the primary screen compared to junior-enlisted soldiers $\chi^2(2, N=1,028) = 32.85, p < .001$. There was no significant difference in the rate of referrals by rank.

Another important finding was that 172 (75.0 %) of the soldiers who exceeded criteria on any scale had never received mental health counseling before. The screening process succeeded in providing these soldiers with an opportunity to identify mental health concerns and to report those concerns to mental health professional for the first time.

Mission Comparisons

We compared psychological screening results from Operation Allied Force to results from Garrison soldiers and soldiers re-deploying from Bosnia in the support of Operation Joint Endeavor. While there were no significant differences on the primary screen between the Operation Allied Force (22.6%) and Garrison (19.8%) samples, soldiers deployed on Operation Allied Force were more likely to exceed criteria on one of the primary screens than soldiers deployed on Operation Joint Endeavor (16.0%), $\chi^2(1, N=5,728) = 25.66, p<.001$.

In comparing the referral rates of soldiers who exceeded criteria on the primary screen, significant differences were found between Operation Allied Force (28.8%), and both Operation Joint Endeavor (15.2%), $\chi^2(1, N=966) = 20.92, p<.001$, and Garrison (58.2%), $\chi^2(1, N=282) = 19.17, p<.001$. Due to different criteria used for making referral decisions during secondary screening interviews, referral data from these missions are difficult to compare, and bear additional study.

After further analysis we found that junior-enlisted male soldiers from Operation Allied Force (12.1%) reported rates of depression significantly greater than their

Operation Joint Endeavor (8.0%) peers, $\chi^2(1, N=2,879) = 12.40, p < .001$. Similarly, a comparison of junior-enlisted males revealed that soldiers from Operation Allied Force (11.4%) reported higher rates of alcohol problems than their Operation Joint Endeavor (8.4%) counterparts, $\chi^2(1, N=5,734) = 9.87, p < .01$. There were no significant mission differences in the depression or alcohol rates for officers and non-commissioned officers. In contrast, male officers (2.2%) reported lower rates of mental health concerns at post-deployment Operation Allied Force than at re-deployment Operation Joint Endeavor (9.2%); and female soldiers from Operation Allied Force reported rates of mental health concern that were similar to female soldiers from Operation Joint Endeavor.

Overall, across the three missions, senior-ranking soldiers were less likely to exceed criteria on any of the scales compared to junior-ranking soldiers. In general, soldiers appeared more psychologically healthy while redeploying from Bosnia than at one to three months post-deployment Albania, or while carrying out garrison duties.

Deployment History

Besides mission, rank and gender-based differences, deployment experience also

emerged from the Operation Allied Force data as a key variable for comparison. First, soldiers with previous deployment experience to Bosnia reported significantly fewer mental health problems than those without prior deployment to Bosnia, $\chi^2(1, N=1,036) = 15.77, p < .00$. Both the primary screen and referral rates demonstrate this difference, Figure 4.

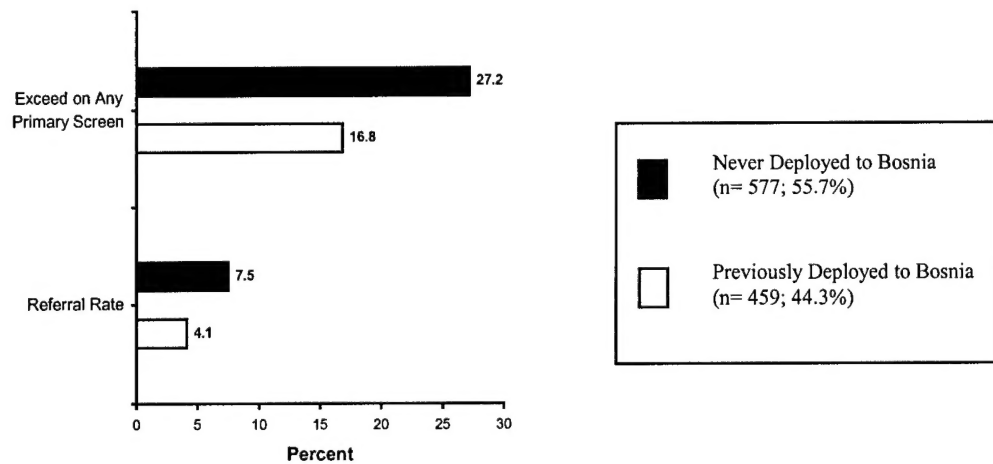


Figure 4: Primary and secondary screening results based on deployment experience.

Second, a sub-sample of enlisted soldiers (N=267) who deployed both to Bosnia in 1997 and to Albania in 1999, reported rates of depression and post-traumatic stress that were lower at post-deployment Albania than at re-deployment Bosnia, a finding that contrasts the overall mission comparison findings listed above. Together, these two findings suggest that prior deployment experience produces a “deployment stress inoculation effect” that facilitates soldiers’ adjusting to subsequent deployments.

CONCLUSIONS

Although soldiers from Operation Allied Force reported rates of psychological distress somewhat higher than their Operation Joint Endeavor and Garrison counterparts, screening results indicated overall psychological well-being and readiness. In general, on the primary screen, senior-ranking soldiers reported fewer psychological concerns than junior-ranking soldiers. Referral rates by rank were not significantly different. A key finding was that soldiers who had previously deployed to Bosnia reported greater psychological well-being and readiness compared to soldiers with no prior deployment experience in the Balkans. This phenomenon was observed at post-deployment, during redeployment and in a garrison setting. To explain this, we have posited a “stress inoculation” hypothesis, namely, deployment experience contributes to better adjustment to subsequent deployments. A competing explanation for this phenomenon is the “self-selection” hypothesis, namely, soldiers who have remained in the military for multiple deployments are psychologically healthier than their counterparts who have left the military. We will continue to design studies to examine these hypotheses in our future research.

The Psychological Screening Program is valuable for both soldiers and commanders. It affords soldiers an opportunity to identify and report their mental health concerns, and provides commanders an assessment of unit psychological readiness. The Psychological Screening Program also allows

researchers to measure psychological risk factors, and to develop more effective prevention strategies for maintaining psychological readiness. By incorporating such findings in their decision-making processes commanders can better lead their soldiers, and also better meet soldiers' mental health needs.

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Assessing Psychological Readiness in U.S. Soldiers Following NATO Operations

Post-deployment Psychological Screening of
1st Armored Division Soldiers who Deployed in Support of
Operation Allied Force

Prepared by the U.S. Army Medical Research Unit-Europe

February 27, 2001

U.S. Army Medical Research Unit-Europe, Walter Reed Army Institute of Research,
U.S. Army Medical Research and Materiel Command



Purpose

- To assess the mental health and psychological readiness of U.S. soldiers who returned from deployment in support of Operation Allied Force.
- To compare Operation Allied Force soldiers to samples of soldiers from a Garrison study, and from a Bosnia redeployment study.



Outline

Background

Operation Allied Force Psychological Screening

- Overall Rates & Referral Rates
- Rank
- Deployment History
- Secondary Screening

Mission Comparisons

- Mission Overview
- Psychological Screening
- Rank Comparisons
- Deployment History

Same Soldiers Comparisons

- Overview
- Psychological Screening
- Summary
- Discussion\Conclusions
- Point of Contact



Background

- Soldiers deployed to Albania in support of Operation Allied Force from APR-JUL 1999.
- From AUG-OCT 1999, within three months after returning from the deployment, 1,043 soldiers completed a command-directed integrated health assessment.
- One component of the health assessment was the Psychological Screening Program.
- The goals of the Psychological Screening Program include:
 - a) Identify soldiers with deployment-related mental health concerns
 - b) Assess psychological readiness for subsequent deployments
 - c) Establish a reference database for future comparisons



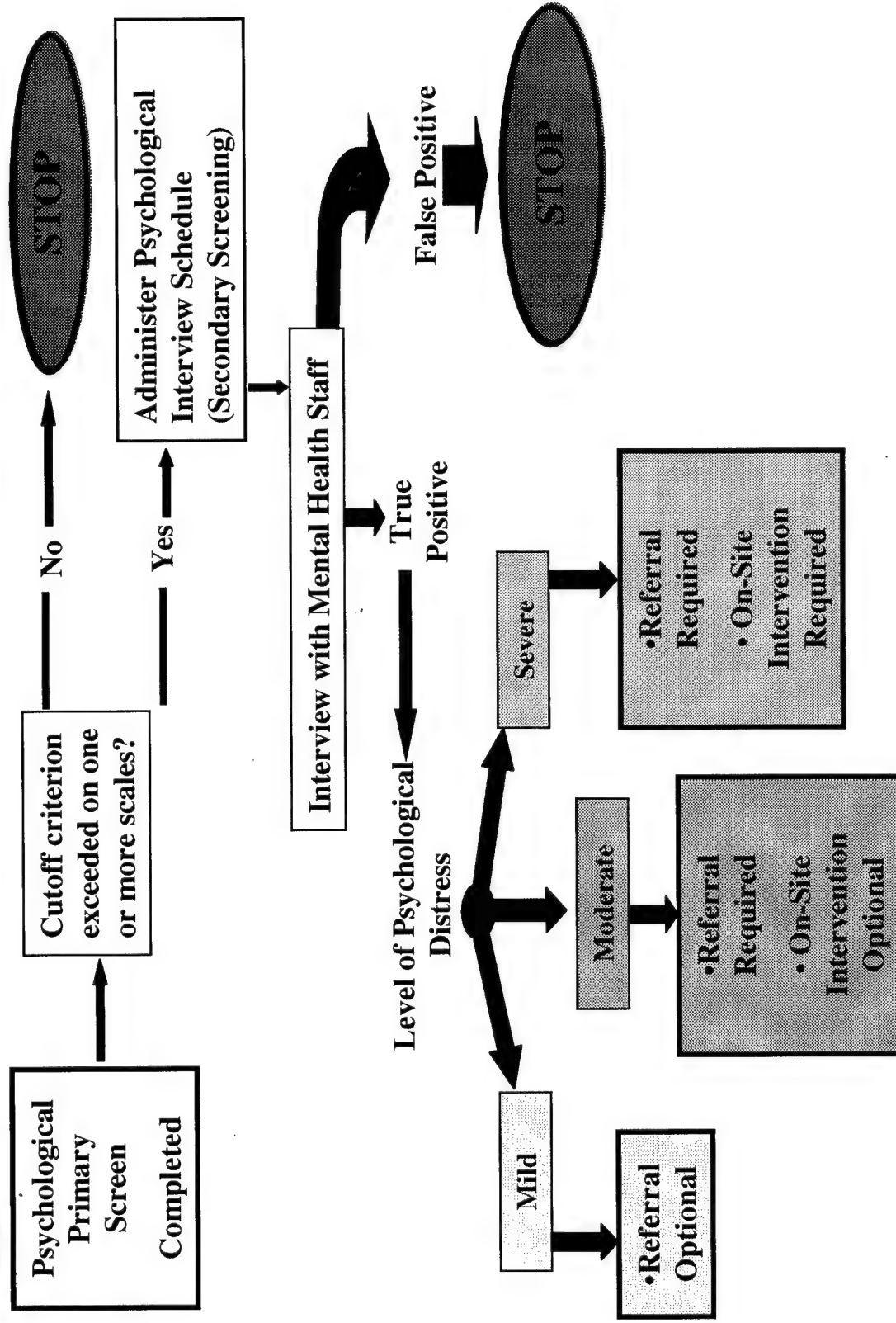
Psychological Screening Procedure

Three Components

- **Primary Screen:** Measured three psychological symptom categories:
 - post-traumatic stress (17-item USAMRU-E PTS checklist)
 - depression (20-item Zung Self-Rating Depression Scale)
 - alcohol problem (4-item CAGE Questionnaire)
- **Secondary Screen Interview:** Military personnel whose scores exceeded established criteria on any indicator were interviewed by trained mental health personnel.
- **Referral:** Secondary interview results determined whether to refer soldiers for follow-up mental health services.



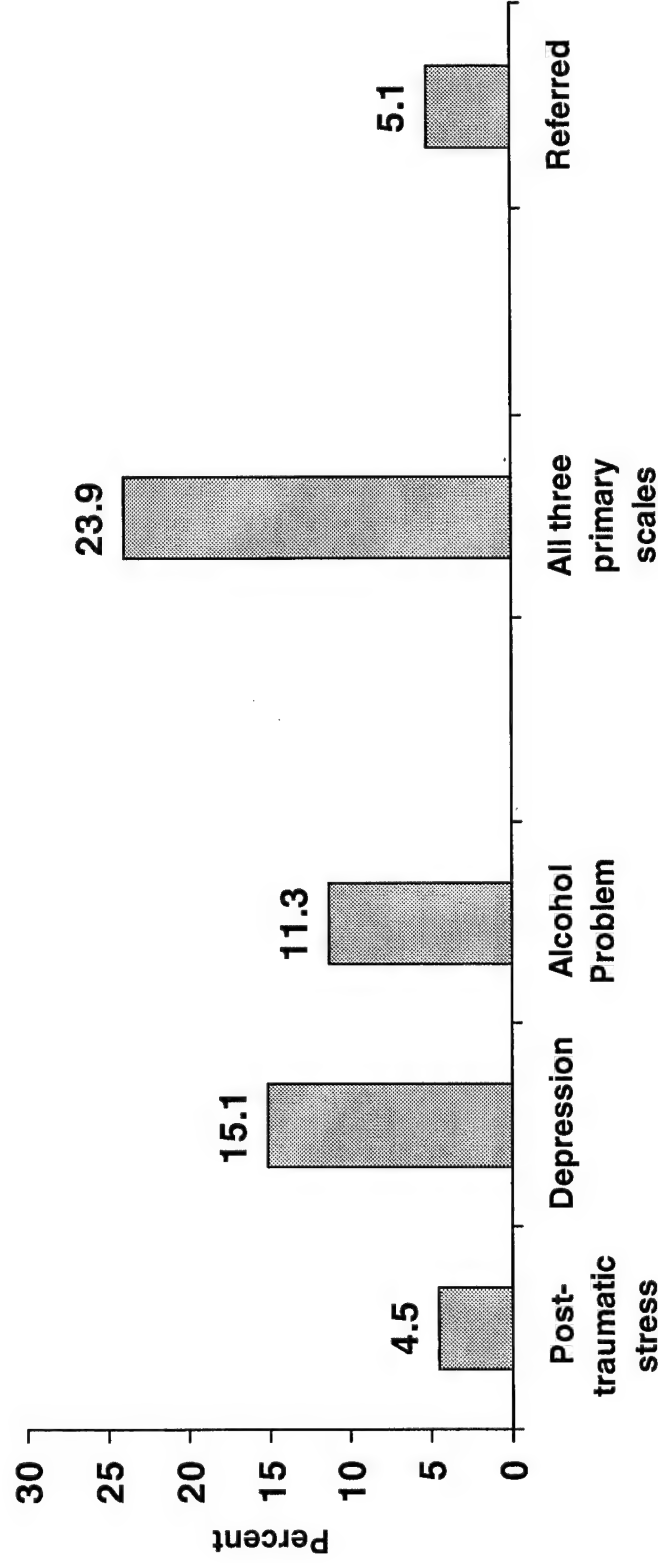
Psychological Screening Scoring Flowchart





Psychological Screening: Overall Rates

- Percent of soldiers deploying to Kosovo in support of Task Force Falcon whose scores on the depression, alcohol, or post-traumatic stress scales exceeded established criteria.
- 5.1 percent (n=92) of the entire sample (20.5) percent of those soldiers interviewed) were referred for follow-up mental health evaluation or treatment.

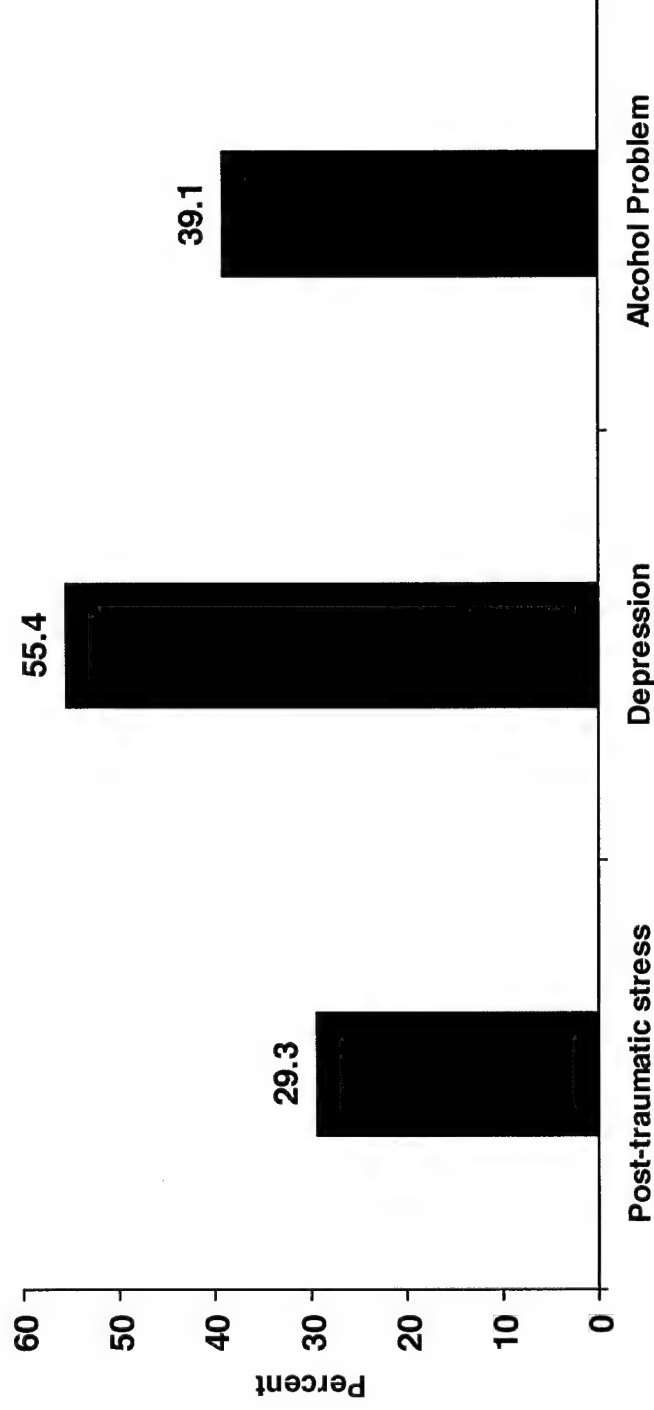




Psychological Screening: Referral Rates

- Percent of 92 soldiers who received referrals for mental health follow-up due to presenting problems of post-traumatic stress (n=27), depression (n=51), or alcohol (n=36).*

* Some soldiers were referred for multiple presenting problems

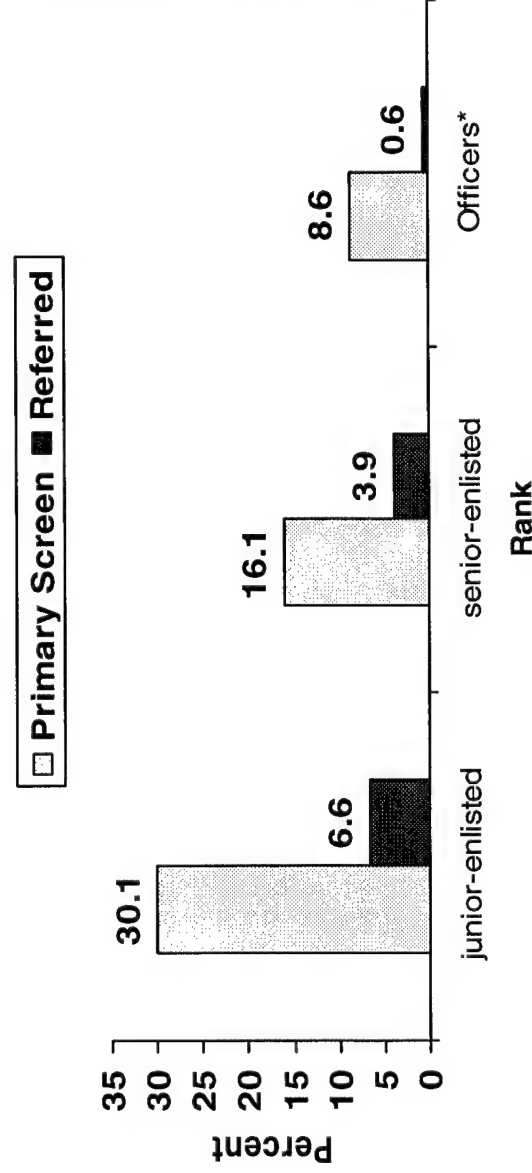




Psychological Screening by Rank

- Percent of predeployment sample exceeding criteria on any scale by rank.
- Those with higher rank were less likely to exceed criteria on the primary screen compared to those with lower rank $\chi^2(2, N=1,759) = 63.35, p < .001$.
- There was no significant difference in the rate of referrals by rank.

Exceeded criteria on the primary screen



Rank

% Total Sample

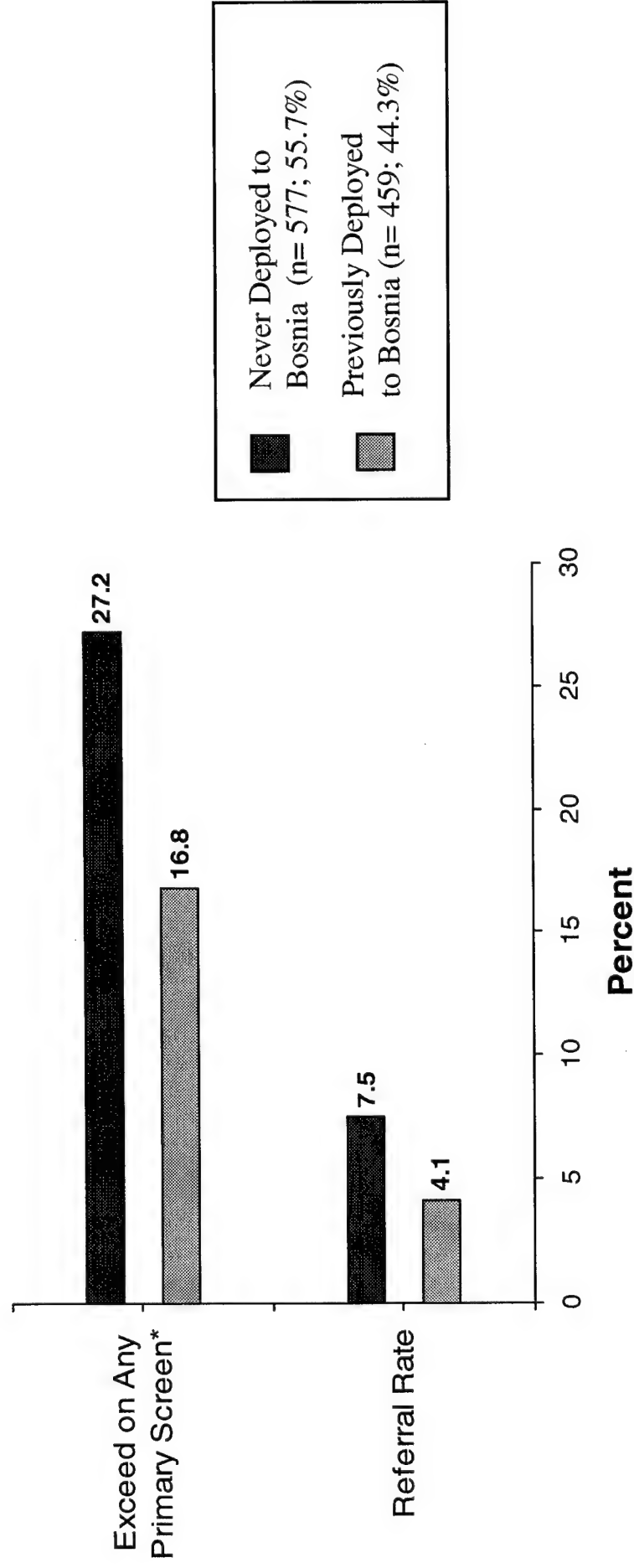
- Junior-enlisted 58.0%
- Senior-enlisted 32.1%
- Officers 9.9%

* Only 9 officers exceeded cutoff on the primary screen. The sample size is too small to yield a meaningful referral rate.



Psychological Screening by Deployment History

- Soldiers who had **never** deployed to Bosnia were more likely to exceed criteria on one of the scales compared to soldiers who had **previously** deployed to Bosnia, $\chi^2(1, N=1,036) = 15.77, p < .001$, suggesting a “stress inoculation effect”.

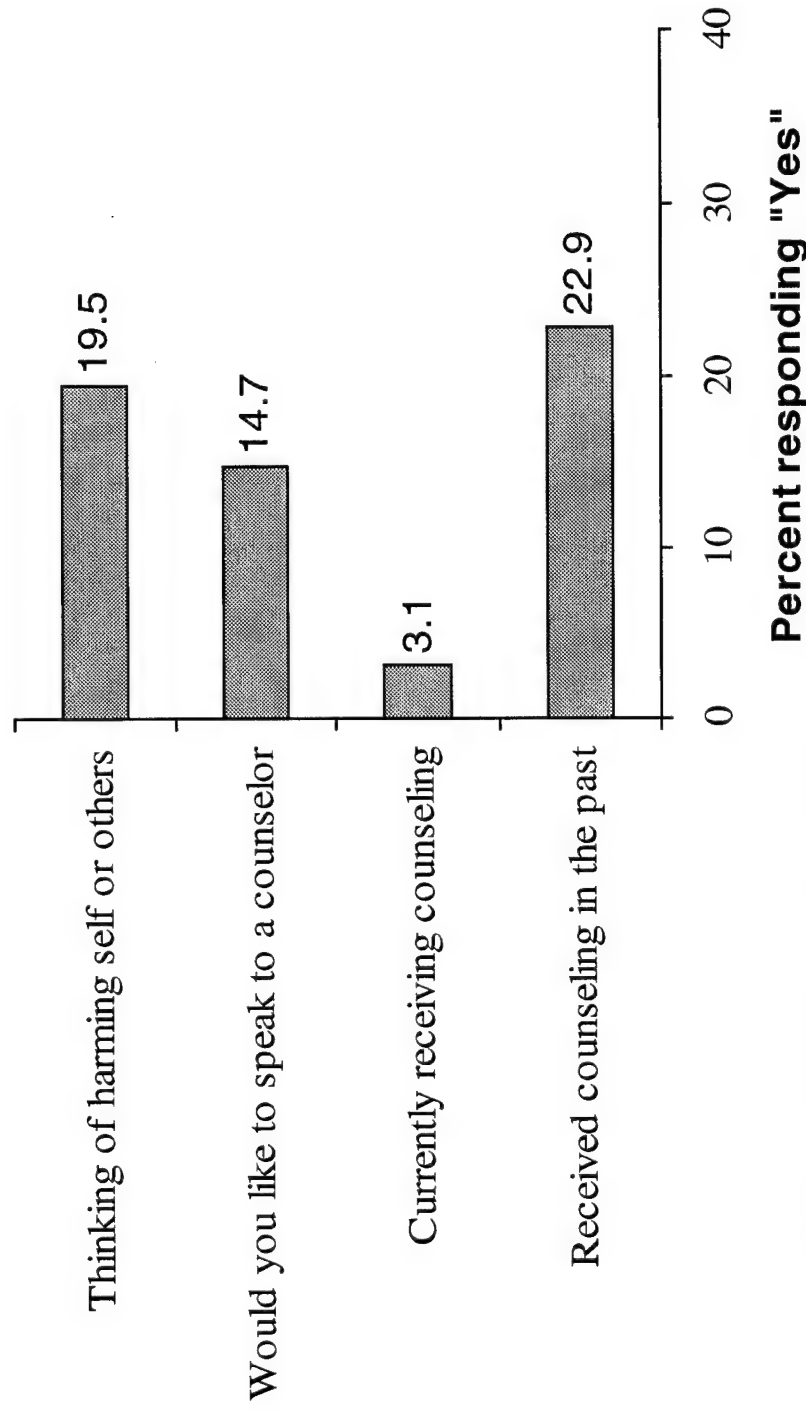


* $p < 0.05$



Secondary Screening: Counseling

- Analysis of 235 soldiers who received an interview and completed the secondary screening survey.
- Over 75 percent of the soldiers interviewed had never received mental health counseling before.





1st Armored Division Data: Mission Overview

Post-deployment data from soldiers supporting Operation Allied Force¹ are compared to re-deployment data from Operation Joint Endeavor (OJE)¹, and garrison data:

- OJE (1AD data only)
- Garrison (1AD data only)

Mission	Location	Data Collection	N Size
Operation Allied Force	Albania	AUG-OCT 99 post-deployment	1,043
Operation Joint Endeavor	Bosnia	FEB – DEC 96 Re-deployment	4,746
Garrison	Germany	APR – JUL 98	338

•¹To facilitate comparability across data sets, only soldiers deployed for 4 months or less were selected for analysis

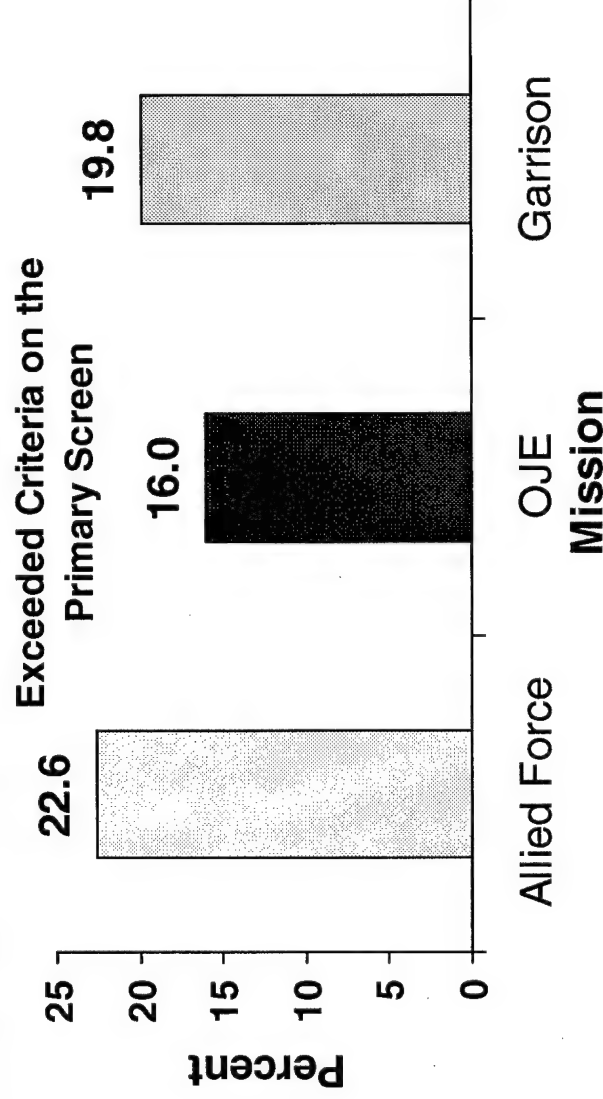


Mission Comparisons: Psychological Screening

- Percent of Operation Allied Force, Garrison, and OJE samples exceeding criteria on the primary screen.
- Soldiers deployed on Operation Allied Force were more likely to exceed criteria on one of the primary screens than soldiers deployed on OJE, $\chi^2(1$,

$N=5,728) = 25.66, p < .001$.

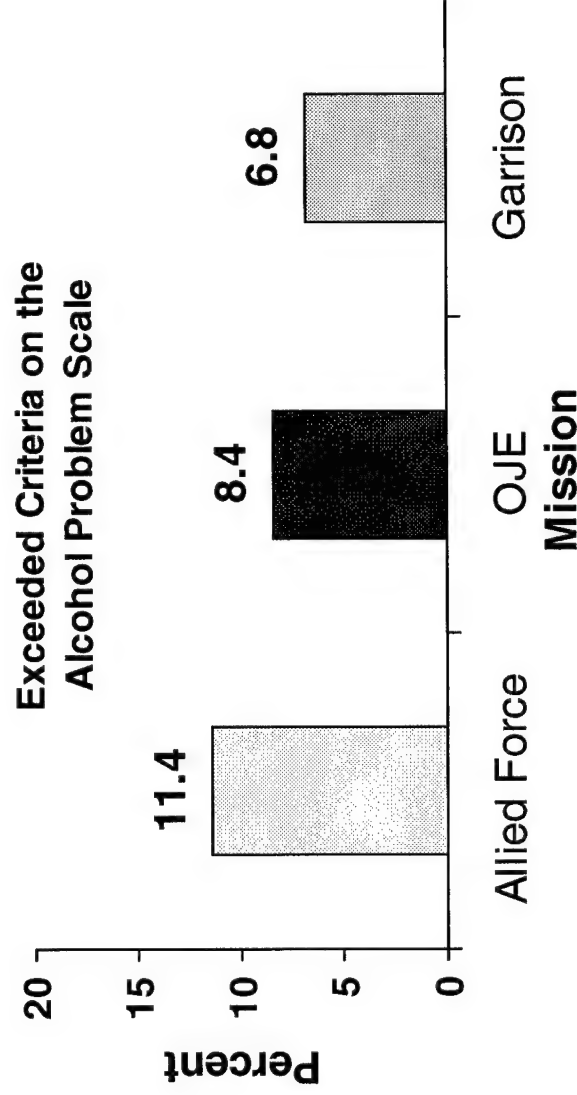
- There were no significant differences on the primary screen between the Operation Allied Force and Garrison samples.





Mission Comparisons: Alcohol Problems

- Percent of Operation Allied Force, Garrison and OJE samples exceeding criteria on the Alcohol Problem Scale.
- Soldiers deployed on Operation Allied Force reported higher rates of alcohol problems than soldiers deployed during OJE, $\chi^2(1, N=5,734) = 9.87, p < .01$ and soldiers in garrison $\chi^2(1, N=1,380) = 5.89, p < .01$.
- Differences in rates of exceeding criteria on the Alcohol Problem Scale are found in male junior-enlisted soldiers.

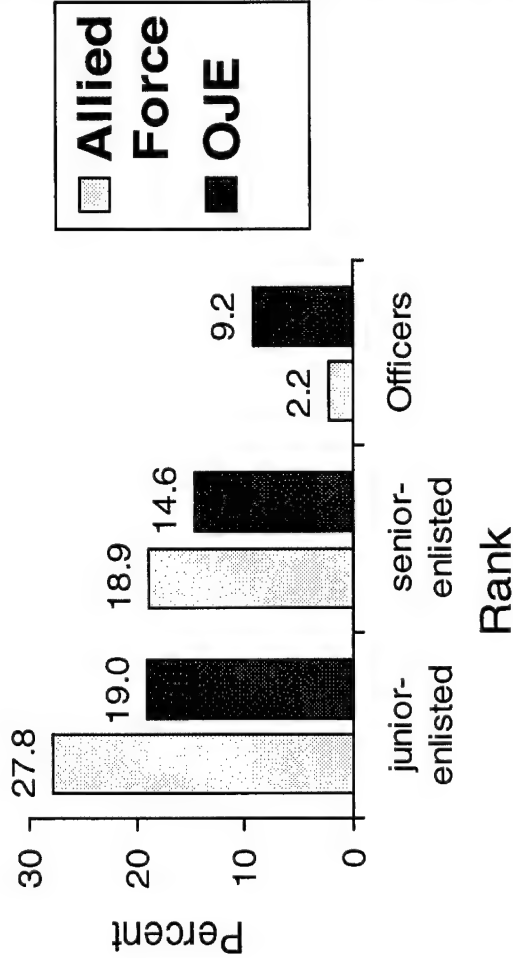




Mission Comparisons: Primary Screen by Rank

- Percent of Operation Allied Force and OJE samples exceeding criteria on the primary screen by rank.

Exceeded Criteria on the Primary Screen



BY RANK

Enlisted: Allied Force junior- enlisted soldiers, $\chi^2(1, N=2,854) = 22.22, p<.001$, and senior-enlisted, $\chi^2(1, N=1,976) = 4.07, p<.05$, were more likely to exceed criteria on one of the scales than their OJE counterparts. This was found for male soldiers.

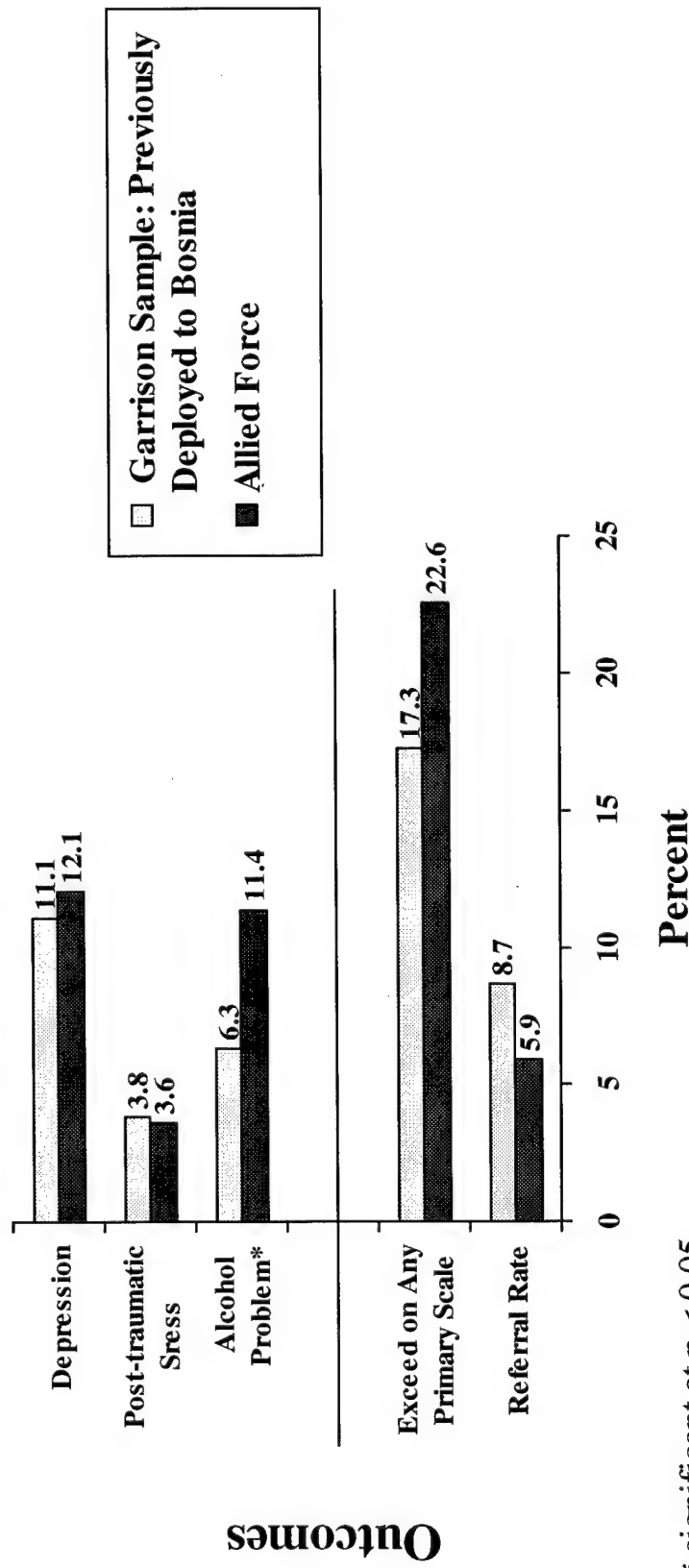
Officers: OJE officers¹ were more likely to exceed criteria on one of the primary scales than Allied Force officers, $\chi^2(1, N=777) = 4.91, p<.05$.

¹There were more company grade officers in the Hawk sample (87.6%) than in the OJE sample (56.2%). There were more Senior Officers (25.7%) and Warrant Officers (2.8%) in the OJE sample than in the Hawk sample (4.5% and .7% respectively).



Garrison Comparison by Deployment History

- Comparison of outcome rates between garrison soldiers previously deployed to Bosnia and to soldiers deployed to Allied Force.
- Allied Force soldiers reported a higher rate of alcohol problems compared to the previously deployed garrison sample. Allied Force and Garrison are similar on all other outcomes, suggesting a “stress inoculation effect”.





Same Soldiers Comparisons

- 301 soldiers were identified who deployed and completed psychological screenings on both Operation Joint Guard (OJG) and Operation Allied Force.
- The soldiers' data were collected at two different times (re-deployment OJG and post-deployment Operation Allied Force).
- Due to the low number of officers (n=28), only data from junior enlisted and non-commissioned officers were analyzed (n=267).
- Range of Scale Scores:

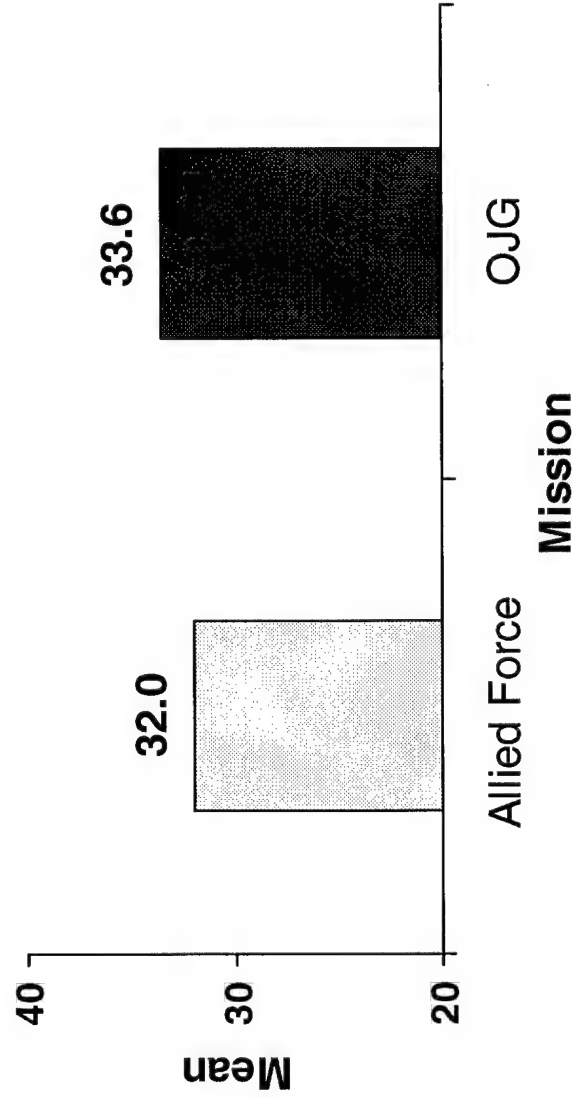
Depression Scale:	20-80
Alcohol Problem Scale:	0-4
Post-traumatic Stress Scale:	17-68



OJG vs. Operation Allied Force: Depression

- Comparison of mean scores on the Depression Scale for a sample of soldiers deployed on both OJG and Operation Allied Force.
- Overall, the same soldiers scored higher on the Depression Scale at re-deployment OJG than at post-deployment Allied Force ($33.57 \text{ v } 32.02$, $t(267)=3.17$, $p<.01$).

Depression Scale



Depression Scale

Range: 20-80

Exceeded Criteria:

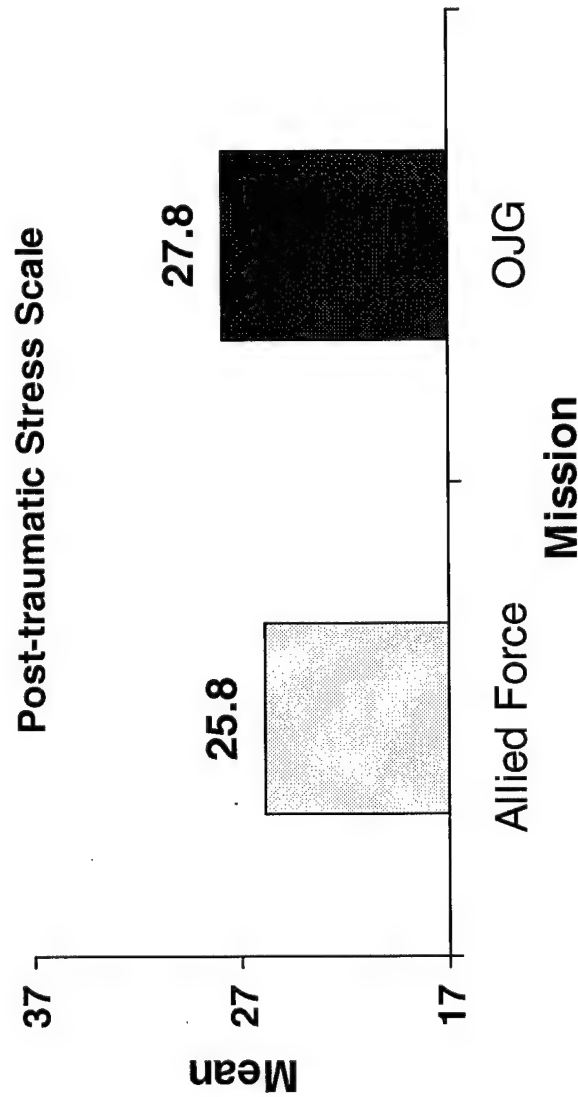
Allied Force: 11.2%

OJG: 12.7%



OJG vs. Hawk: Post-traumatic Stress

- Comparison of mean scores on the Post-traumatic Stress Scale for a sample of Soldiers deployed on both OJG and Operation Allied Force.
- The same soldiers scored higher on the Post-traumatic Stress Scale at re-deployment OJG than at post-deployment Allied Force ($25.80 > 27.80$, $t(239)=3.06$, $p<.01$).



Post-traumatic Stress Scale

Range: 17-68

Exceeded Criteria:

Allied Force: 3.0%

OJG: 5.2%



Summary of Key Findings: Operation Allied Force

- 22.6 percent (N=235) of the Operation Allied Force sample exceeded criteria on either the depression, alcohol, or post-traumatic stress scales.
- 5.9 percent (N=62) of the sample were referred for additional mental health evaluation or treatment.
- Over 75 percent of soldiers who exceeded criteria on any scale had never received mental health counseling before.
- Senior ranking soldiers were less likely to exceed criteria on any of the scales compared to junior ranking soldiers.
- Soldiers with previous deployment experience to the Bosnia reported fewer mental health problems than those without previous deployment experience to Bosnia.



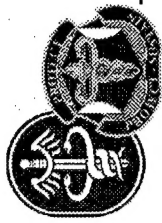
Summary of Findings: Mission Comparisons

- At post-deployment Allied Force, soldiers reported higher rates of depression and alcohol problems than soldiers re-deploying from OJE.
- At post-deployment Allied Force, soldiers reported rates of alcohol problems significantly greater than a sample of soldiers in Garrison.
- Officers reported lower rates of mental health concerns at post-deployment Allied Force than while re-deploying from OJE.
- A sample of soldiers who deployed both to OJG and Allied Force, reported rates of depression and post-traumatic stress that were lower at post-deployment Allied Force than while re-deploying from OJE.



Discussion\Conclusions

- 1) The command initiated Psychological Screening Program provided soldiers an opportunity to identify and report their mental health needs, and demonstrated overall psychological readiness to commanders.
- 2) In general, soldiers reported more mental health concerns at post-deployment Allied Force than while re-deploying from OJE.
 - * Mission Differences
 - * Post-deployment vs. Re-deployment
- 3) Soldiers with prior deployment experience to the Balkans reported significantly fewer mental health concerns.
 - * Stress Inoculation
 - * Self Selection



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